UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/643,759	08/23/2000	Masataka Okayama	ASA-910	1002

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ART UNIT	PAPER NUMBER
2625	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-24_ is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-24_ is/are rejected.

7)☒ Claim(s) _2-5_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _23 August 2000_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

     If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All b)☐ Some * c)☒ None of:

         1.☒ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____ .

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

     a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _4_ .

4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: .

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on October 4, 1999. It is noted, however, that applicant has not filed a certified copy of the Japanese 11-282425 application as required by 35 U.S.C. 119(b).

Specification

1.   The disclosure is objected to because of the following informalities:

- PP. 9-10: Descriptions of Figs. 3A, 6 and 12 are not proper. Note that Figs. 6 and 12 per se do not describe a "method"

- P. 24, lines 23-24: "the surveillance image obtained" should have been " the combined surveillance and the supplement information images" or something to this effect

- Claim 21: "conducting inverse cosine transform" should have been "conducting inverse discrete cosine transform"

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3.   Claims 21 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are those that determine whether the steps to be taken are for generating the combined images (i.e., from the first step through the recording step) or for "reproducing" using the combined images (i.e., from the conducting-Huffman-decoding step through the last step).

4.   Claims 21, 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "at time of recording" in claims 21 and 22 is a relative term which renders the claim indefinite. The term "at the time of recording" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Specifically, the term can actually mean the time the step "recording the composite data" is taken, in which case the preceding steps cannot occur "at time of recording." On the other hand, if it is defined as from the time the system is turned on to

the actual recording of the composite data, then any activities in between occur "at time

of recording."

Similar comment applies to the terms "at time of reproducing" and "at time of

displaying," respectively.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6.   Claim 19 is rejected under 35 U.S.C. 102(e) as being anticipated by Adler et al.

(US 6,275,599).

Regarding claim 19, Adler et al. discloses

- Huffman decoding means for conducting Huffman decoding on compressed data
  for image display, said compressed data for image display being obtained by
  conducting addition and then Huffman encoding
  [Fig. 2: reference 206; (Col. 3: lines 12-14 imply the use of Huffman decoding)]

- separation means for separating the quantized data of said surveillance image data from the compressed data for image display subjected to Huffman decoding [Col. 5: lines 1-5, where the set of changes are combined with another image in a manner that permits it to be extracted, i.e., the set of changes and the image can be separated. Note: It is clear that the set of changes can be the quantized DCT of the supplement information and the image, which is but a 2-D array, can be the quantized DCT of the surveillance image]
- decoding means for conducting dequantization and then inverse discrete cosine transform on the quantized data of said surveillance image data separated by said separation means; and
  [Fig. 2: references 204, 205]
- output means for outputting said surveillance image data obtained by said decoding means
  [Fig. 2: reference 201]

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 1-5, 11, 16-18, 23, 24 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Adler et al. (US 6,275,599), in view of Manjunath et al. (US

6,332,030), further in view of admitted prior art (P. 2, lines 11-14 and 19-22).

Regarding claim 1, Adler et al. discloses an system [Fig. 1] with an image processor

[Fig.1, references 102-107] that combines the quantized discrete cosine transform

(DCT) coefficients of an image with supplement information image (watermark in this

case) and subsequently applies Huffman encoding to the combined result [Fig. 1,
reference 107; Col. 3, lines 4-20].

Adler et al. fails to teach the following:

- Inclusion of a surveillance camera

- supplement information image generation means

- using quantized DCT coefficients of supplement information image as well

However, Examiner takes Official Notice that it is well known in the art that a
surveillance system typically includes one or more cameras (and one or more image
display monitors, for that matter) and Admission teaches the use of a supplement
information generation means to produce bit maps (i.e., images) of date and time
information. Furthermore, in Fig. 15 Manjunath et al. teaches to quantize the DCT
coefficients of the supplement information image (the signature image in this case)
before combination to provide control over the quantity and quality of the supplement
information image to be combined.

Therefore it would have been obvious to one of ordinary skill in the art at the time the
invention was made to modify the invention of Adler et al. by including a surveillance
camera and a supplement information image generation means (taught by admitted
prior art) as well as quantizing the DCT coefficients of the supplement information
image (taught by Manjunath) before combining it with the quantized DCT coefficients of
the main image. In this way a system that can capture images, provide their associated

supplement information such as image capture date and time that can help with the

analysis of the images and/or the circumstances of their capture, reduce data size (by

quantization and Huffman encoding), and take advantage of the linearity of the de-

quantization and inverse DCT (as part of decompressing a JPEG image) to display the

superimposition of an image and its associated supplement information image without

having to separate them first for decoding followed by superimposition. (It should be

clear to one of ordinary skill in the art that quantized DCT coefficients are an

intermediate product of the JPEG compression process.)

Regarding claim 2, Admission [P.2, lines 11-14] further discloses linking supplement

information (recording time in this case) to its associated image by storing the

information at the JPEG header of the image.

Claims 3, 4 and 16 are similarly analyzed and rejected as claims 1 and 19. (Regarding

claim 16, it is by definition that quantization following discrete cosine transform makes

the process irreversible since quantization is lossy, and that Huffman encoding is

lossless, i.e., reversible.)

Regarding claim 5, Adler et al., Manjunath et al. and Admission disclose everything

except

- difference information generation means for generating difference information
  between first supplement information image data relating to first surveillance
  image data and second supplement information image data relating to second
  surveillance image data

However, Examiner takes Official Notice that MPEG compression process includes

taking difference of two images and subsequently applying DCT, Quantization and a

variable-length encoding (commonly the Huffman encoding), in other words, JPEG of

the difference image.

Therefore it would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify the combined invention of Adler et al., Manjunath et al.

and the prior art admission by generating the JPEG of the difference supplement

information image in order to improve the compression ratio since the difference of

successive images typically has a lower entropy.

Regarding claim 11, Adler further discloses an input means [Fig. 1, reference 101] for

receiving images.

Regarding claim 17, Manjunath further discloses combining the DCTs of the

surveillance image and the supplement information image [Fig.15].

Regarding claim 18, it can be similarly analyzed as claim 17 except that the combination

is applied to the quantized surveillance image and the supplement information image.

However, Examiner takes Official Notice that quantization is well known in the art of

image processing as a technique to reduce data size (by lowering the number of bits

per pixel for its value) and the result is also more amenable to a variable-length

encoding that may follow (such as is typical in JPEG encoding). While not as effective

as JPEG in reducing image data size, it nonetheless achieves storage savings while

avoiding the significant processing cost for computing DCT as required by JPEG.

Therefore it would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify the combined invention of Adler et al., Manjunath et al.

and the admitted prior art by applying quantization to the images of interest before

combining them in order to achieve modest storage saving while not incurring extra

processing cost.

Claims 23 and 24 are similarly analyzed as claims 1, 11 and 16.

9.   Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Adler et al. (US 6,275,599), Manjunath et al. (US 6,332,030) and admitted prior art

(P. 2, lines 11-14 & 19-22) as applied to claims 1-5, 11, 16-19, 23, 24 above, and

further in view of Squicciarini et al. (US 5,677,979).

Regarding claim 21, Adler et al., Manjunath et al. and admitted prior art (P. 2, lines 11-

14 & 19-22) disclose everything except

- recording the Huffman-encoded composite data

- displaying resultant data

However, Squicciarini et al. discloses data recording and displaying [Fig. 1, references 12, 14; Fig. 5, references 124, 144].

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined invention of Adler et al., Manjunath et al. and admitted prior art (P. 2, lines 11-14 & 19-22) by including devices/steps for recording and displaying encoded and decoded data, respectively. In this way encoded data such as those obtained from a video incident capture system can be stored for later analysis and displayed for visual review as a means of quality control.

Claim 22 is similarly analyzed and rejected as claims 17 and 21.

10.   Claims 6, 7, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adler et al. (US 6,275,599), Manjunath et al. (US 6,332,030) and admitted prior art (P. 2, lines 11-14 & 19-22) as applied to claims 1-5, 11, 16-19, 23, 24 above, and further in view of Clark et al. (US 4,829,526).

Regarding claim 6, Adler et al., Manjunath et al. and admitted prior art (P. 2, lines 11-14 & 19-22) disclose everything except

- feature value generation means for generating feature value peculiar to JPEG data for image display obtained by said Huffman encoding means; and
- feature value linking means for linking said JPEG data for image display to said feature value data

However, Clark et al. discloses a feature value (cyclic redundancy check, or CRC, code in this case) generation means that operates on the Huffman encoder outputs [Fig. 1, references 14, 16; Col. 2, lines 46-47] and interleaves (i.e., links) the CRC code and the Huffman encoder output [Fig. 1, reference 22; Col. 6, lines 11-14].

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined invention of Adler et al. and Manjunath et al. by calculating the CRC code of the output of the Huffman encoding process and linking the code to the output data as taught by Clark so that the integrity of the data can be validated and/or corrected after, say, being transmitted over a communication link or after being retrieved for reproduction from a medium where it has been previously recorded.

Regarding claim 7, Clark et al. further discloses a separation means, a post-separation feature value generation mean, and a decision means [Fig. 1, references 48, 50, 56; Col. 6, lines 45-59].

Claim 9 is similarly analyzed and rejected as claim 6.

11.   Claim 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Adler et al. (US 6,275,599), Manjunath et al. (US 6,332,030), admitted prior art (P. 2, lines 11-14 & 19-22) and Clark et al. (US 4,829,526) as applied to claims 1-7, 9, 11, 16-19, 23, 24 above, and further in view of Bodnar et al. (US 6,275,831).

Regarding claim 8, Adler et al., Manjunath et al. , admitted prior art (P. 2, lines 11-14 & 19-22) and Clark et al. disclose everything except for a decision means. However, Bodnar discloses a system where the absence of the feature value data (the CRC check sum in this case) is determined. [Col. 11, lines 6-9.]

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combined invention of Adler et al., Manjunath et al.

and Clark et al. by only optionally computing feature value data for linking and providing

a way to determine the data's presence or absence in order to provide data integrity

through the check sum only when circumstance requires it. This can improve efficiency

in, for example, transmitting data over communication links when link noise or security

is not a concern and therefore no checksum is needed.

12.   Claim 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Adler et al.

(US 6,275,599), Manjunath et al. (US 6,332,030), admitted prior art (P. 2, lines 11-14 &

19-22) and Clark et al. (US 4,829,526) as applied to claims 1-7, 9, 11, 16-19, 23, 24

above, and further in view of Linnartz (US 6,314,518).

Regarding claim 10, Adler et al., Manjunath et al., admitted prior art (P. 2, lines 11-14 &

19-22) and Clark et al. disclose everything except that the said feature value generation

means generates a hash value. However, Linnartz discloses a system where hash

values are computed for compressed images. [Col. 9, lines 22-24.]

Therefore it would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify the combined invention of Adler et al., Manjunath et al.

and Clark et al. by calculating the hash values of the compressed images in order to

provide a measure to validate data integrity by using the has values as the digital

signatures of the images.

13.   Claims 12-15, 20 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Adler et al. (US 6,275,599), Manjunath et al. (US 6,332,030) and admitted prior art

(P. 2, lines 11-14 & 19-22) as applied to claims 1-5, 11, 16-19, 23, 24 above, and further

in view of Sadjadian (US 6,181,831).

Regarding claim 12, Adler et al. (US 6,275,599), Manjunath et al. (US 6,332,030) and

admitted prior art (P. 2, lines 11-14 & 19-22) disclose everything except for using

addition as the combining means. However, Sadjadian discloses a matrix adder to

generate combined output blocks [Fig. 7, reference 190; Col. 7, lines 38-40].

Therefore it would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify the combined invention of Adler et al., Manjunath et al.

and admitted prior art by using matrix addition as the combination means in order to

take advantage of the linear property of the inverse quantizer and the inverse DCT to

produce the sum (i.e., superimposition) of the original images without having to

separate their combined, compressed versions first to save considerable processing

time.

Claims 13, 14, 15 are similarly analyzed and rejected as claims 1, 11,12, 19.

Regarding claim 20, it is similarly analyzed as claims 1, 11, 12, 19. In addition,

Examiner takes the following Official Notice: it is obvious that if matrix M3 is obtained by

adding matrices M1 and M2, then M2 can be recovered by subtracting M1 from M3.
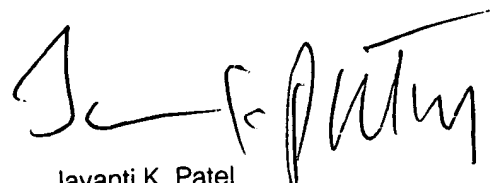
Accordingly, claim 20 is rejected.

Contact Information

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Yubin Hung whose telephone number is (703) 305-

1896. The examiner can normally be reached on 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Bhavesh Mehta can be reached on (703) 308-5246. The fax phone number

for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is (703) 305-

4700.

Jayanti K. Patel
Primary Examiner

Yubin Hung
September 10, 2003